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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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Feed additive - Dipotassium hydrogen phosphate

饲料添加剂 磷酸氢二钾

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Foreword

Clause 1, Clause 3 and Clause 5 of this standard are compulsory; the remainder is

recommended.

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard was proposed by and is under the jurisdiction of the National Technical Committee on Feed Industry Standardization (SAC/TC 76).

The drafting organisations of this standard are the Sichuan Provincial Feed Work Station and the China Feed Industry Association.

1 Scope

China's compulsory national standard for dipotassium hydrogen phosphate sold as a feed additive. Phosphorus and potassium are two of the minerals a productive animal cannot get enough of from grain alone, and dipotassium hydrogen phosphate delivers both in one soluble salt, which is why it turns up in compound feed, in mineral premixes and in the electrolyte drinks given to poultry under heat stress. The reason a national standard exists is that the same salt is made by very different routes and the cheap routes carry the risks: phosphate rock brings fluorine, arsenic, lead and chromium with it, and an additive dosed into every kilo of feed is exactly the wrong place for them to accumulate. This standard therefore restricts itself to the product made by the thermal phosphoric acid process, and it fixes the requirements, the test methods, the inspection rules and the rules on labelling, packaging, transport, storage and shelf life. Clauses 1, 3 and 5 are compulsory, the remainder recommended. It is used by feed additive manufacturers, by compound feed mills buying the salt, and by the inspection bodies that check what is actually in the bag.

This standard specifies the requirements, test methods and inspection rules for the feed additive dipotassium hydrogen phosphate, together with its labelling, packaging, transport, storage and shelf life.

This standard applies to the feed additive dipotassium hydrogen phosphate produced by the thermal phosphoric acid process.

Molecular formula: K_2HPO_4 .

Relative molecular mass: 174.17 (based on the 2007 international relative atomic masses).

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 6682 Water for analytical laboratory use - Specification and test methods.

GB 10648 Feed label.

GB/T 13079-2006 Determination of total arsenic in feeds.

GB/T 13080 Determination of lead in feeds - Atomic absorption spectrometry.

GB/T 13083-2002 Determination of fluorine in feeds - Ion selective electrode method.

GB/T 13088 Determination of chromium in feeds.

GB/T 14699.1 Feeding stuffs - Sampling.

GB 25561-2010 National food safety standard - Food additive - Dipotassium hydrogen phosphate.

3.1 Appearance and properties

A white powder or crystalline granular material, readily soluble in water.

3.2 Technical indicators

The technical indicators shall comply with the requirements of Table 1.

Table 1 lists nine controlled items with their limits: the dipotassium hydrogen phosphate content expressed as the salt, as phosphorus and as potassium, all on a dry basis, and the maximum admissible contents of fluorine, lead, arsenic and chromium, together with the loss on drying and the water-insoluble matter.

4 Test methods

Unless otherwise stated, the reagents used in the test methods of this standard are of analytical grade and the water is grade 3 water as specified in GB/T 6682. For the atomic absorption spectrometry work the reagents are of guaranteed grade and the water meets the grade 1 requirement of GB/T 6682.

4.1 Sensory examination

The appearance and the odour of the product are examined visually and by smell.

4.2 Identification test

The identification is carried out in two parts: the phosphate ion is identified by the yellow precipitate formed with silver nitrate solution, which dissolves in excess ammonia solution or in nitric acid solution; the potassium ion is identified by the flame test, the flame being observed through cobalt glass.

4.3 Determination of dipotassium hydrogen phosphate

The principle is gravimetric: in an acid medium quinoline molybdate is used as the precipitant to throw the whole of the phosphate in the test solution as quinoline

phosphomolybdate, and the precipitate is filtered, dried and weighed, from which the dipotassium hydrogen phosphate content of the sample is calculated.

4.4 Determination of the potassium content

The potassium is precipitated as potassium tetraphenylborate, and the precipitate collected in a sintered glass crucible is dried and weighed. The mean of two parallel determinations is taken as the result.

4.5 Determination of the fluorine content

The sample is dissolved in hydrochloric acid solution and made up to volume, and the determination then follows GB/T 13083-2002.

4.6 Determination of the lead content

Determined in accordance with GB/T 13080.

4.7 Determination of the arsenic content

Determined in accordance with Clause 5 of GB/T 13079-2006.

4.8 Determination of the chromium content

Determined in accordance with GB/T 13088.

4.9 Determination of the loss on drying

Determined by the method of A.11 in Annex A of GB 25561-2010.

4.10 Determination of the water-insoluble matter

Determined by the method specified in A.5 of Annex A of GB 25561-2010.

5.1 Batching

Products of the same raw material and the same production process, produced continuously or in the same production shift, form one batch, subject to a ceiling on the mass of a single batch.

5.2 Sampling

Sampling is carried out in accordance with GB/T 14699.1.

5.3 Factory inspection

Of the items listed in Table 1, potassium, phosphorus, loss on drying and fluorine are the